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National Cable Television Association | State Telecommunications Policy | 1724 Massachusetts Avenue, Northwest
Washington, D.C. 20036-1969
202 775-3669 | Fax 202 775-3695

February 20, 1997

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Federal Communications Commission
Office of Secretary

William F. Caton, Acting Secretary
Federal Communications Commission
1919 M Street, N.W.- Rm. 222
Washington, D.C. 20554

Re: CS Docket No. 96-45

Dear Mr. Caton:

On February 19, 1997, representatives of the National Cable Television Association (NCTA) including Lee Selwyn and Susan Baldwin of Economics and Technology Inc., met with Daniel Gonzalez, legal adviser to Commissioner Chong, and James Coltharp, legal adviser to Commissioner Quello. A separate meeting was held with members of the Federal-State Joint Board staff. On behalf of NCTA, Dr. Selwyn and Ms. Baldwin reiterated the comments regarding cost proxy models filed by NCTA in the above proceeding.

The following Joint Board staff members participated: Bryan Clopton, Emily Hoffner, David Konuch, Bob Loube, and Bill Sharkey of the FCC; and from state offices, Charlie Bolle, Sandra Makeef, Phil McClelland (via telephone), Barry Payne, Paul Pederson, Brian Roberts, and Tom Wilson.

You will find attached a copy of the handouts that were distributed at these meetings. If you have any questions concerning this matter, please contact the undersigned.

Sincerely,

Richard L. Cimerman

Richard L. Cimerman

cc w/o attachment:

Daniel Gonzalez	James Coltharp
Bryan Clopton	Emily Hoffner
David Konuch	Bob Loube
Bill Sharkey	Charlie Bolle
Sandra Makeef	Phil McClelland
Barry Payne	Paul Pederson
Brian Roberts	Tom Wilson

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AN ANALYSIS OF THE USE OF COST PROXY MODELS FOR COMPUTING HIGH-COST SUPPORT

Presentation to the Federal Communications Commission
by Economics and Technology, Inc.
on behalf of the National Cable Television Association

February 19, 1997

- ✓ **The status quo is preferable to the adoption of a model with economically inefficient algorithms or variables**

- ✓ **Costs can be computed at the CBG level, but USF funding determinations should be made at the wire center level**

- ✓ **Universal service funds should not be used to subsidize ILECs' deployment of fiber for the ILECs' strategic purposes**

- ✓ **Regardless of the model selected, the FCC should affirmatively establish specific parameters for the so-called "user-specified inputs"**

- ✓ **The capital structure proposed by the three sponsors of the BCPM would give ILECs a huge windfall**

- ✓ **Depreciation lives in a USF cost proxy model should not cross-subsidize ILECs' competitive pursuits**

- ✓ **The ILECs will receive the vast majority of the USF**
- ✓ **The "fill" factors should be set to reflect the stable demand of basic local exchange service and should not reflect excess capacity associated with ILECs' provision of competitive services**
- ✓ **The FCC should consider carefully the merits of a decision to subsidize single-line businesses**

The status quo is preferable to the adoption of any of the models now before the FCC

There is no urgency in establishing a multi-billion dollar giveaway to the ILECs in the name of universal service.

- The revenue stream of the Tier 1 ILECs is not in imminent jeopardy.
- The subscribership levels of households and small businesses are not in jeopardy.
- Price cap regulation affords ILECs a significant opportunity to generate revenues and profits and, some argue, ILECs that are regulated by price cap regulation do not need high-cost support.
- None of the models screen out high-income CBGs.

A forward-looking economically efficient cost proxy model should be used rather than the reported costs *only if the model design and the model "inputs" are appropriate for the services being subsidized.*

USF support should be computed at the wire center level

CBGs (or grids) are too granular

- High cost support is presently computed at the study area level.
- The use of CBGs would give ILECs a huge windfall (the greater the disaggregation, the more situations that are above-average or above the threshold).
- ILECs enjoy economies of scale and scope that go well beyond the CBG.
- CBGs have nothing to do with telecommunications networks.
- Concerns of cream-skimming are unfounded.

Only one of the three models allow a user to compute USF support at the wire center level

- The Telecom Economic Cost Model computes cost and support at the wire center level.
- Neither the HM3 nor the BCPM allows a user to compute support assessing need at the wire center level.
- The user interface suggests such a possibility but appears to simply mean that one is defining the "universe" of wire centers to be examined.
- The USF support is still computed by comparing the CBG cost result with the threshold rather than the wire center average cost with the threshold.

Use of the CBG results in an excessive USF support burden

Support should be at least one-third less than the amounts yielded by the models, because the models use the wrong level of geographic aggregation.

Assume a $30 threshold and three CBGs each with 200 households, one with a cost of $20, one with a cost of $30, and one with a cost of $40.

- Under the CBG approach, monthly USF support of $2,000 would be provided.
- Under the wire center approach, no USF support would be provided.

Model sponsors should revise their models to allow the computation of USF support assuming need is assessed at the wire center level.

Regardless of the model selected, the FCC should establish specific parameters for the so-called "user-specified inputs"

ETI undertook an "apples-to-apples" comparison of the BCM2 and the Hatfield Model 2 to determine the major reasons that the *results* of the models differ.

- Equalizing inputs greatly narrowed the gap between the results of the models.
- The fact that the models are converging if similar inputs are used is one way to "validate" the models' designs.
- The large gaps between the models' results underscore the significance of properly specifying the user-variable inputs.

Christensen Associates reached a similar conclusion regarding the significance of the inputs, but reached very different conclusions from ETI as to the appropriate values to select for the major inputs.

ETI is conducting a similar evaluation of the BCPM, HM3, and TECM

The ILECs will receive the vast majority of the USF

- The BCPM's default capital structure is preposterous
  - — The capital structure proposed by the three sponsors of the BCPM would give ILECs a huge windfall.
  - — The purported competition that allegedly justifies the requested capital structure simply doesn't exist.
  - — The BCPM default is 32.8% debt and 67.2%. Yet one of the BCPM sponsors is requesting a debt/equity ratio of 44%/56% in a state proceeding that is investigating the cost of providing basic local exchange service.

The ILECs will receive the vast majority of the USF (cont'd.)

Default Capital Cost Comparison			
	Ratio	Cost	Weighted Costs
BCPM			
Debt	32.82%	7.85%	2.58%
Equity	67.18%	13.12%	8.81%
Total	100.00%		11.39%
HM3			
Debt	45.00%	7.70%	3.47%
Equity	55.00%	11.90%	6.55%
Total	100.00%		10.01%
TECM			
Debt	40.00%	8.50%	3.40%
Equity	60.00%	12.00%	7.20%
Total	100.00%		10.60%

- The BCPM seeks depreciation lives that may comport with their overall strategic and competitive interests but the default BCPM lives have nothing to do with basic local exchange service.

Default Depreciation Life Comparison

Account	Description (HM3 used as Default)	BCPM	HM3	TECM
2112	Motor Vehicles	8.00	9.16	
2115	Garage Work Equipment	12.00	11.47	
2116	Other Work Equipment	14.00	13.22	
2121	Buildings	42.50	48.99	
2122	Furniture	16.00	16.56	
2123.1	Office Support Equipment	11.00	11.25	
2123.2	Company Comm Equipment		7.59	
2124	Computers	5.50	6.24	
2212	Digital Switching	10.00	16.54	12.00
2220	Operator Systems		9.94	
2232.2	Digital Circuit Equipment	8.50	10.09	
2351	Public Telephone		8.01	
	NID, SAI		12.00	
2411	Poles	30.00	16.13	30.00
2421-m	Aerial Cable - Metallic	12.50	16.80	15.00
2421-nm	Aerial Cable - Non-Metallic	19.00	22.11	20.00
2422-m	Underground - Metallic	11.50	21.17	15.00
2422-nm	Underground - Non-Metallic	19.00	22.87	25.00
2423-m	Buried - Metallic	14.00	19.86	15.00
2423-nm	Buried - Non-Metallic	19.00	24.13	25.00
2426-m	Intrabuilding - Metallic		15.64	
2426-nm	Intrabuilding - Non-Metallic		23.65	
2441	Conduit Systems	50.00	51.35	50.00
	Average Non-Metallic Cable		23.36	
	Trunking			15.00
	Termination			15.00
2111	Land	0.00		
2114	Special Purpose Vehicles	10.00		

Notes:
(1) BCPM default lives are based on LEC industry data survey requesting forward looking lives.
(2) Hatfield default values are based on average projection lives (adjusted for net salvage value) determined by the three-way meetings between the FCC, State Commission and ILECs) for the RBHCs and SNET.
(3) TECM default lives taken from Appendix A, Section 7, p. 1 of TECM documentation accompanying FCC submission.

The statewide USF support (assuming an illustrative $30 threshold) for Texas increases by 12.1 percent when the HM3 is run using the inappropriate BCPM default values for depreciation.

Impact of Using BCPM Depreciation Lives in the HM3			
	Default HM3	**HM3 using BCPM lives**	**Percent Increase**
ICO	$166,931,221	$185,298,614	11.0%
SWBT	$79,132,825	$90,500,696	14.4%
Total	$246,064,046	$275,799,310	12.1%

The fill factors should be set to reflect the stable demand of basic local exchange service and should not reflect excess capacity associated with ILECs' provision of competitive services

The default fill factors in the models have been gradually moving in the right direction.

The Hatfield Model 3's new feature of computing *actual* as well as *objective* fill factors provides a useful tool.

The models should not be using fill factors that are set to meet *tomorrow's* demand while computing unit costs based upon *today's* demand.

Default Fill Factors for Feeder and Distribution Increase in Newer Model Releases

Comparison at Various Density Levels (Density measured in Lines per Square Mile)

Feeder

Density	BCM	BCM2	BCPM	HM2.2.1	HM2.2.2	HM3	TECM(1)
3	0.65	0.75	0.75	0.65	0.65	0.65	0.875
50	0.65	0.75	0.80	0.65	0.75	0.75	0.875
100	0.75	0.80	0.80	0.75	0.75	0.75	0.875
250	0.80	0.80	0.85	0.80	0.80	0.80	0.875
500	0.80	0.80	0.85	0.80	0.80	0.80	0.875
750+	0.80	0.85	0.85	0.80	0.80	0.80	0.875

Distribution

	BCM	BCM2	BCPM (2)	HM2.2.1	HM2.2.2	HM3	TECM(1)
3	0.25	0.40	0.40	0.50	0.50	0.50	0.75
50	0.25	0.40	0.45	0.50	0.55	0.55	0.75
100	0.35	0.45	0.55	0.55	0.55	0.55	0.75
250	0.45	0.55	0.65	0.60	0.60	0.60	0.75
500	0.45	0.55	0.65	0.60	0.60	0.60	0.75
750	0.55	0.65	0.75	0.65	0.65	0.65	0.75
1000	0.65	0.75	0.75	0.70	0.70	0.70	0.75
2500	0.65	0.75	0.80	0.70	0.70	0.70	0.75
3000+	0.75	0.80	0.80	0.75	0.75	0.75	0.75

Notes: (1) TECM also lists a combined Feeder/Distribution utilization factor with a default value of 85%.
(2) The BCPM Distribution Fill Factor reaches 75% at 501 lines/square mile.

Sources: ETI's April, August and October 1996 Reports and documentation accompanying BCPM, HM3 and TECM filings with the FCC.

Hatfield Model, Release 3.0

Default Copper Feeder Fill Factors
vs.
Calculated "Actual" Copper Feeder Fill Levels

Texas - All ICOs

Density Zone	Default Feeder	Actual Feeder
0-5	.65	.33
5-100	.75	.54
100-200	.80	.63
200-650	.80	.65
650-850	.80	.67
850-2,550	.80	.68
2,550-5,000	.80	.71
5,000-10,000	.80	.72
10,000+	.80	.76

Sources: Hatfield Model Release 3.0 Inputs and Assumptions, Appendix B, p. 3; results of ETI run for TX (all ICOs).

Hatfield Model, Release 3.0

Default Distribution Fill Factors
vs.
Calculated "Actual" Distribution Fill Levels

Texas - All ICOs

Density Zone	Default Distribution	Actual Distribution (DLC)	Actual Distribution (non-DLC)
0-5	.50	.32	.13
5-100	.55	.39	.27
100-200	.55	.39	.35
200-650	.60	.43	.39
650-850	.65	.44	.44
850-2,550	.70	.49	.49
2,550-5,000	.75	.54	.53
5,000-10,000	.75	.53	.54
10,000+	.75	.51	.54

Sources: Hatfield Model Release 3.0 Inputs and Assumptions, Appendix B, p. 2; results of ETI run for TX (all ICOs).

Universal service funds should not be used to subsidize ILECs' deployment of fiber except where such deployment is economically efficient for the services in question

ETI has faulted earlier versions of the BCPM:

— The original BCM "hard-wired" the critical assumption of the so-called copper-fiber crossover and furthermore "locked" relevant cells in the spreadsheets.

— Unlike the original BCM, the BCM2 *did allow* a user to select from a menu of four different crossover points.

- However, the BCM2 continued to use a default copper-fiber crossover point that was economically unsound.
- ETI's sensitivity analysis demonstrated that by replacing the default value of 12,000 with 18,000 feet, the BCM2 yielded *lower cost results.*
- The algorithm in the BCPM is identical to that in the BCM2 and continues to offer the same menu of four options with the same default.

The HM3 uses the same algorithm and default values as in the HM2.2.2.

The models continue to differ regarding the fundamental issue of whether copper can be used for long distances in the distribution leg.

The BCPM continues to include a so-called "Maximum Copper Distribution" distance with a default value of only 12,000 feet.

By contrast, there is no apparent limit to the length of copper distribution legs in the HM3.

However, unlike in the earlier HM release, the HM3 now uses a coarser gauge of cable and deploys load coils for copper loops that are longer than 18,000 feet.

HM2.2.2 was criticized for deploying inadequate distribution plant, specifically in more densely populated CBGs.

— The HM3 now includes a very complex distribution architecture, which is likely to increase investment in local plant.

The FCC should consider carefully the merits of a decision to subsidize single-line businesses

The Joint Board recommends that the high-cost program also subsidize single-line businesses.

— The fact that the models apparently can to compute support for this group of customers should not influence the FCC's determination of *whether* it is good policy to subsidize this group of customers.

There is no compelling public policy reason to subsidize single-line businesses and thus the FCC should exercise its discretion to depart from the Joint Board in this regard.

Analysis of the new models

Factors causing the newer releases of the models to compute *higher* USF requirements:

— Subsidies for single-line businesses will cause the USF support to increase.

— The BCPM now reflects updated 1995 census data (the previous version of the Hatfield Model already did, but the BCM2 did not) — thus there is a larger pool of potential households eligible for subsidy.

— The capital costs are higher in the BCPM than they were in the BCM2.

— The more complex distribution architecture, which results in the deployment of more local loop plant, is a probable factor causing HM3 costs to increase.

Factors causing the newer releases of the models to compute *lower* USF requirements:

— In sparsely populated areas, households are assumed to be clustered (the BCM2 already included a road buffer overlay; the previous version of the Hatfield Model did not).

- The HM3 now includes a measure of the unoccupied space in each CBG, which is used to reduce the area to be served by distribution plant.

— The fill factors in the BCPM are higher than they were in the BCM2.